UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,457	02/06/2002	Brent Townshend	01-1731	6759

7590 08/31/2004

Matthew J. Sampson
McDonnell Boehnen Hulbert & Berghoff
32nd Floor
300 S. Wacker Drive
Chicago, IL 60606

EXAMINER	
SOTOMAYOR, JOHN	
ART UNIT	**PAPER NUMBER**
3714	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/068,457	TOWNSHEND, BRENT	
	Examiner	Art Unit	
	John L Sotomayor	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13, 16-63 and new claims 64-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,16-63 and new claims 64-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *8/25/2004*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 13, 2004 has been entered. In response to the amendment filed August 13, 2004, claims 14-15 are canceled and claims 1-13, 16-63 and the newly added claims 64-67 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims1,2,4,5-7,42-47, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Jr. et al (US 6,017,219) in view of Parry et al (US 6,077,085) in further view of Wasowicz et al (US 6,299,452).

Regarding claims 1 and 2, Adams, Jr. et al discloses a system and method of reading instruction that includes a means for detecting speech of a user who is reading out loud (Col 2, lines 36-41 and Fig. 1), a means for evaluating the user's reading skill (Col 4, lines 3-7) and a means for making reading recommendations (Col 4, lines 43-47). Adams, Jr. et al does not specifically disclose that the recommendations are for books based on the evaluating means. However, Parry et al teaches a system of reading instruction in which the instructional materials consist of print materials (Col 2, lines 35-38) and the print materials are recommended to a user based upon the evaluated skill level of the user to increase the level of complexity of materials presented to the user as the user's skill increases (Col 3, lines 30-35). Adams, Jr. et al/Parry et al does not specifically disclose that evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means, computing a score based on factors extracted from the output of the speech recognizer, factors are selected from a group consisting of insertions, deletions, substitutions, pauses, stretching out letters or stretching out sounds, or that at least one correct response is determined from sample responses provided by sample speakers. However, Wasowicz et al teaches that evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means (Col 7 line 66 – Col 8, line 5), computing a score based on factors extracted from the output of the speech recognizer (Col 7, lines 48-58), factors are

selected from a group consisting of insertions, deletions, substitutions, pauses, stretching out letters or stretching out sounds (Col 8, lines 27-38), and that at least one correct response is determined from sample responses provided by sample speakers (Col 8, lines 2-12). Therefore, it would have been obvious to one of ordinary skill in the art to provide a system and method of reading instruction that includes a means for detecting speech of a user who is reading out loud, a means for evaluating the user's reading skill, and a means for making reading recommendations as disclosed by Adams, Jr. et al with a system of reading instruction in which the instructional materials consist of print materials and the print materials are recommended to a user based upon the evaluated skill level of the user as taught by Parry et al and evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means, computing a score based on factors extracted from the output of the speech recognizer, factors are selected from a group consisting of insertions, deletions, substitutions, pauses, stretching out letters or stretching out sounds, or that at least one correct response is determined from sample responses provided by sample speakers as taught by Wasowicz et al for the purposes of presenting more complex material to a user as a user's skill level increases.

Regarding claims 4 and 49, Adams, Jr. et al discloses a system and method of reading instruction with a means for providing feedback on the user (Col 4, lines 42-47).

Regarding claim 5, Adams, Jr. et al discloses a system and method of reading instruction that provides feedback to the user in the form of a progress report (Col 9, lines 60-65).

Regarding claim 6, Adams, Jr. et al does not specifically disclose a reading instruction system in which feedback is a comparison with peers. However, Wasowicz et

al teaches that reading metric data may be accumulated and then compared with all students taking the same test and then compare score results against all peers taking the test, then providing feedback to interested parties (Col 7, lines 34-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system in which feedback is a comparison with peers for the purposes of discovering how well a student is progressing in comparison to peers.

Regarding claims 7 and 50, Adams, Jr. et al does not specifically disclose a reading instruction system with means for providing marketing data. However, Wasowicz et al teaches that information concerning the scores of a reading student may be used by a recommender to suggest additional training tools, thus marketing a new tool set to a student who may be in need of the products offered. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system with a means for providing marketing data for the purposes of exposing students and other interested parties to tools and products that would be useful to the student.

Regarding claim 42, Adams, Jr. et al discloses a system and method of reading instruction with a client including a display and a speech detector (Col 2, lines 51-56 and Fig. 1) and a server device, shown as a system controller, operable to detect speech from a user reading from a book, evaluates the speech, and provides reading recommendations to the user (Col 4, lines 3-12 and 43-47 and Fig. 1). Adams, Jr. et al does not specifically disclose that the recommendations are for books based on the evaluating means. However, Parry et al teaches a system of reading instruction in which the instructional materials consist of print materials (Col 2, lines 35-38) and the print materials are

recommended to a user based upon the evaluated skill level of the user to increase the level of complexity of materials presented to the user as the user's skill increases (Col 3, lines 30-35). Adams, Jr. et al/Parry et al does not specifically disclose that evaluating a user's reading skill is based on factors extracted from the output of the speech recognizer, or that at least one correct response is determined from sample responses provided by sample speakers. However, Wasowicz et al teaches that evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means (Col 7 line 66 – Col 8, line 5), computing a score based on factors extracted from the output of the speech recognizer (Col 7, lines 48-58), and that at least one correct response is determined from sample responses provided by sample speakers (Col 8, lines 2-12). Therefore, it would have been obvious to one of ordinary skill in the art to provide a system and method of reading instruction that includes a means for detecting speech of a user who is reading out loud, a means for evaluating the user's reading skill, and a means for making reading recommendations as disclosed by Adams, Jr. et al with a system of reading instruction in which the instructional materials resident on a server consist of print materials and the print materials are recommended to a user based upon the evaluated skill level of the user as taught by Parry et al and evaluating a user's reading skill is based on factors extracted from the output of the speech recognizer, or that at least one correct response is determined from sample responses provided by sample speakers as taught by Wasowicz et al for the purposes of a server presenting more complex material to a user as a user's skill level increases.

Regarding claim 43, Adams, Jr. et al discloses a system and method of reading instruction in which the display is a device selected from the group consisting of a

wireless handheld device, a personal digital assistant, a monitor, a personal computer, a digital data reader, an electronic book and a document. In the instant case, the reference discloses a personal computer and a document as display means of choice (Col 3, lines 40-56).

Regarding claim 44, Adams, Jr. et al discloses a system and method of reading instruction in which the speech detector is a device selected from the group consisting of a telephone, a mobile telephone, a microphone and a voice transducer. In the instant case, the reference discloses a microphone as the speech detector (Col 3, line 53).

Regarding claims 45-47, Adams, Jr. et al does not specifically disclose a reading instruction system that communicates using a network (claim 45), that the network is a telephone network (claim 46), or that the network is a packet-switched network (claim 47). However, Wasowicz et al teaches a reading instruction system that may be implemented over a plurality of networks, including a wide area network, a packet-switched network, or any other computer capable network such as a modem network attached through telephone connectivity (Col 5, lines 51-64). Therefore it would have been obvious to one of ordinary skill in the art at the time of instruction to produce a reading instruction system capable of communicating with a server device using a network for the purposes of reaching a broad base of readers, including those remote from any significant population center.

4. Claims 8-13,16-17,19-29,34-41, 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Jr. et al in view of Waters (5,540,589) in further view of Wasowicz et al.

Regarding claim 8, Adams, Jr. et al discloses a language instruction system and method with a speech recognition device operable to provide an estimate of speech (Col 2, lines 37-48) and provide a reading recommendation (Col 4, lines 42-47). Adams, Jr. et al does not specifically disclose converting the estimate of speech into an item score or using said score to provide a reading recommendation or that a score is based on factor extracted from an estimate of speech and at least one correct response determined from sample responses provided by sample speakers. However, Waters teaches a system for converting an estimate of speech into an item score (Col 3, lines 2-4). In addition, Wasowicz et al teaches computing a score based on factors extracted from the output of the speech recognizer (Col 7, lines 48-58) and that at least one correct response is determined from sample responses provided by sample speakers (Col 8, lines 2-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide an automatic reading system with a speech recognition device operable to provide an estimate of speech as disclosed by Adams, Jr. et al convert the estimate of speech into a score as taught by Waters and provide a reading recommendation based upon that score in which at least one correct response is determined from sample responses provided by sample speakers as taught by Wasowicz et al for the purposes of assisting a user in quantifying reading progress and ability.

Regarding claim 9, Adams, Jr. et al discloses a system in which the speech recognition system estimates the linguistic content of input speech (Col 4, lines 2-11).

Regarding claims 10 and 11, Adams, Jr. et al discloses a system in which the estimate of speech is placed in data files on a computer system (Col 2, lines 52-56). It is inherent, when storing data into a computer that this data be converted to a machine

recognizable format (claim 10). In addition, it is notoriously common and well-known to place data into data files on a computer system in the ASCII data format (claim 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to convert estimate of speech data from an analog input format to a machine recognizable format, and that this format is ASCII for storage in a computer system for the purposes of placing the data in a state upon which it may be operated and metrics derived therefrom.

Regarding claim 12, Adams, Jr. et al discloses a system with a plurality of databases which include a response database (Col 4, lines 17-32).

Regarding claim 13, Adams, Jr. et al discloses a system with a plurality of databases including a correct response database (Col 4, lines 17-25).

Regarding claim 16, Adams, Jr. et al does not disclose, nor does Waters teach a reading instruction system in which an item score is calculated using Item Response Theory. According to Applicant's specification, Item Response Theory is a statistical method for evaluating a speech estimate that is readily available through reference books available on the market since 1979. Wasowicz et al teaches that various statistical analysis methods may be used to determine a plurality of statistics concerning a student's score in reading proficiency and production, including those outlined in the reference documents concerning Item Response Theory (Col 7, lines 25-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to produce a reading instruction system wherein a score is calculated using Item Response Theory for the purposes of assessing a student's reading production during training.

Regarding claims17 and 41, for purposes of examination the "speech" referred to in the claim is assumed to be the speech recorded by the reader in the instant case. Adams, Jr. et al discloses the population of a database containing responses that are different from the correct responses in a given speech from a reader (Col 4, lines 20-25). Adams, Jr. et al does not specifically disclose that this database comprises a score. However, Waters teaches a system for converting an estimate of speech into an item score (Col 3, lines 2-4). In addition, Wasowicz et al teaches that a score is determined based in part upon a comparison of differences between the captured speech and at least one pre-stored correct response (Col 8, lines 2-12). With the data available in a database and the teaching of a score being a desirable measure of reader progress, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a system in which a calculated score represents the number of differences between a recorded speech and the database of correct responses as disclosed and taught by Adams, Jr. et al/Waters et al/Wasowicz et al. This score would be calculated for the purposes of providing robust feedback to the reader.

Regarding claims 19, 21 and 22, Adams, Jr. et al discloses a recommendation device that provides feedback to a user (claim 19)(Col 4, lines 43-47), has access to a plurality of databases (claim 21)(Col 4, lines 17-28), and wherein the databases include a book database (claim 22)(Col 4, lines 7-10).

Regarding claim 20, Adams, Jr. et al does not specifically disclose nor does Waters teach a reading instruction system with means for providing marketing data. However, Wasowicz et al teaches that information concerning the scores of a reading student may be used by a recommender to suggest additional training tools, thus

marketing a new tool set to a student who may be in need of the products offered. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system with a means for providing marketing data for the purposes of exposing students and other interested parties to tools and products that would be useful to the student.

Regarding claims 23-27, Adams, Jr. et al discloses a reading instruction system and method that contains a plurality of book databases that contain several versions of a book (claim 23) (Col 4, lines 12-28), versions of a book with different difficulty level profiles (claim 24) (Col 4, lines 3-11), a version of the book containing a memory pointer capable of tracking in several versions of a book where a user is reading (claim 25) (Col 4, lines 12-37), versions of the book containing linkage points (claim 26) (Col 4, lines 29-42) and wherein the recommendation device uses the linkage points to switch between the several versions of the book (claim 27) (Col 4, lines 3-11). In this instance, Adams, Jr. et al sets forth a reading system with multiple versions of a book that encompass the text, visual and audio versions, each of which is linked to the others and tracked to maintain a level profile for a reader to allow a reader and a computer to switch between the several versions, and the amount and level of information each will read as shown in Column 4, lines 3-42.

Regarding claims 28 and 29, Adams, Jr. et al discloses a plurality of databases that include a user database (claim 28) that includes user information such as user identification, history of books read and evaluations, user preferences, and responses to questions (Col 4, lines 2-52).

Regarding claim 34, Adams, Jr. et al discloses a language instruction system and method with a speech recognition device operable to provide an estimate of recorded speech (Col 2, lines 37-48), and estimate of linguistic content of a recorded speech (Col 2, lines 49-56) and provide a reading recommendation (Col 4, lines 42-47). Adams, Jr. et al does not specifically disclose converting the estimate of speech into an item score or using said score to provide a reading recommendation or that the recommendation is for books to be read or that the score is based on factors . However, Waters teaches a system for converting an estimate of speech into an item score (Col 3, lines 2-4). In addition, it is common and well-known to utilize a provided score for producing feedback and results recommendations in an instruction system. Also, Wasowicz et al teaches evaluating a user's reading skill and computing a score based on factors extracted from the output of a speech recognizer to form a speech level estimate (Col 7, lines 48-58) and that at least one correct response is determined from sample responses provided by sample speakers (Col 8, lines 2-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide an automatic reading system with a speech recognition device operable to provide an estimate of recorded speech, an estimate of the linguistic content of a recorded speech as disclosed by Adams, Jr. et al and converting the estimate of speech into a score and provide a reading recommendation based upon that score as taught by Waters and that evaluating a user's reading skill and computing a score based on factors extracted from the output of a speech recognizer to form a speech level estimate and that at least one correct response is determined from sample responses provided by sample speakers as taught by Wasowicz et al for the purposes of assisting a user in quantifying reading ability and performance improvement.

Regarding claim 35, Adams, Jr. et al discloses a reading instruction system in which the level profile for a reader is adjusted (Col 4, lines 3-11). Adams, Jr. et al does not specifically disclose that the reading instruction system contains an electronic book. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to keep pace with the innovation in reading instruction systems by using an electronic book for the purposes of applying a level profile method to the most current technological reading matter.

Regarding claim 36, Adams, Jr. et al discloses a recommendation device that provides feedback to a user (Col 4, lines 43-47).

Regarding claim 37, Adams, Jr. et al does not specifically disclose nor does Waters teach a reading instruction system with means for providing marketing data. However, Wasowicz et al teaches that information concerning the scores of a reading student may be used by a recommender to suggest additional training tools, thus marketing a new tool set to a student who may be in need of the products offered. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system with a means for providing marketing data for the purposes of exposing students and other interested parties to tools and products that would be useful to the student.

Regarding claims 38 and 39, Adams, Jr. et al does not specifically disclose that the speech detector in the system converts speech into electrical signals. However, Waters teaches that speech may be converted to electronic signals prior to storing the information contained in such signals into a computer file (claim 38) (Col 4, lines 9-11)

where the data may then be used to estimate the linguistic content of the recorded speech (claim 39) (Col 4, lines 12-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a system in which a speech detector converts speech into electrical signals for the purposes of storing the information contained in such signals into a computer database for later use.

Regarding claim 40, Adams, Jr. et al does not specifically disclose nor does Waters teach the formulation of an item score calculated using Item Response Theory. According to Applicant's specification, Item Response Theory is a statistical method for evaluating a speech estimate that is readily available through reference books available on the market since 1979. Wasowicz et al teaches that various statistical analysis methods may be used to determine a plurality of statistics concerning a student's score in reading proficiency and production, including those outlined in the reference documents concerning Item Response Theory (Col 7, lines 25-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system with an evaluation device for calculating an item score using statistical methods such as Item Response Theory for the purposes of increasing the accuracy of a reading recommendation for the user.

Regarding claims 64-67, Adams, Jr. et al/Waters et al does not specifically disclose that factors for determining a reading score from a speech recognizer include the number of insertions, deletions, and substitutions needed to convert the output into the correct response (claim 64 and 66) or where factors include pauses, stretching out letters, and stretching out sounds (claim 65 and 67). However, Wasowicz et al teaches a plurality of tests for a user reading aloud into a speech recognizer in which the tests, such

as beginning and ending sound and sound blender modules inherently recognize factor modifiers such as pauses and stretching out letters and sounds as well as insertions, deletions and substitutions required to convert reading input into an output for determining a correct response (Col 8, lines 15-38). Therefore, it would have been obvious to one of ordinary skill in the art to provide a reading performance system including a speech recognizer as disclosed by Adams, Jr. et al/Waters et al with modules to determine the number of insertions, deletions, and substitutions needed to convert the output into the correct response and where factors include pauses, stretching out letters, and stretching out sounds as taught by Wasowicz et al for the purposes of correctly correlating a reading score with an individual user.

5. Claims 3 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Jr. et al in view of Parry et al in further view of Wasowicz et al in further view of Huffman et al (US 5,697,793).

Regarding claim 3, Adams, Jr. et al/Parry et al/Wasowicz et al does not specifically disclose that the reading instruction system uses an electronic book. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to keep pace with the innovation in reading instruction systems by using an electronic book for the purposes of greater flexibility and ease of use for the student.

Regarding claim 48, Adams, Jr. et al/Parry et al/Wasowicz et al discloses a server device for adjusting the difficulty level profile for a user of a reading instruction system (Col 4, lines 3-7). Adams, Jr. et al/Parry et al/Wasowicz et al does not specifically

disclose that the reading instruction system includes an electronic book. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system in which a server device is used to adjust the level profile of an electronic book. Combining the system disclosed by Adams, Jr. et al/Parry et al/Wasowicz et al with the teaching of Huffman et al produces a reading instruction system that may potentially reach a much larger number of users.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Jr. et al in view of Waters in further view of Wasowicz et al in further view of Huffman et al.

Regarding claim 18, Adams, Jr. et al discloses the population of a database containing responses that are different from the correct responses in a given speech from a reader (Col 4, lines 20-25). Adams, Jr. et al does not specifically disclose that this database comprises a score. However, Waters teaches a system for converting an estimate of speech into an item score (Col 3, lines 2-4). Adams, Jr.et al does not disclose, nor does Waters teach a system that includes an electronic book. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). With the data available in a database and the teaching of a score being a desirable measure of reader progress, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a system in which a calculated item score represents the number of differences between a recorded speech and the database of correct responses when reading an electronic book. This score would be calculated for the

purposes of providing robust feedback to the reader while engaged in reading text implemented in an electronic format.

7. Claims 30,32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Jr. et al in view of Wasowicz et al in further view of Parry et al.

Regarding claim 30, Adams, Jr. et al discloses a reading instruction system with a speech recognition module to provide an estimate of linguistic content in machine recognizable format (Col 4, lines 3-11), and a recommendation device that accesses a book database containing several versions of a book (Col 4, lines 3-42). Adams, Jr. et al does not specifically disclose the formulation of an item score calculated using Item Response Theory or that recommendations are for books to be read. According to Applicant's specification, Item Response Theory is a statistical method for evaluating a speech estimate that is readily available through reference books available on the market since 1979. Wasowicz et al teaches that various statistical analysis methods may be used to determine a plurality of statistics concerning a student's score in reading proficiency and production, including those outlined in the reference documents concerning Item Response Theory (Col 7, lines 25-45), that reading parameters needed to convert speech into a correct response are tracked (Col 8, lines 28-38) and that at least one correct response is determined from sample responses provided by sample speakers stored previously (Col 8, lines 2-12). Wasowicz et al does not specifically disclose that recommendations are for books to be read. However, Parry et al teaches a system of reading instruction in which the instructional materials consist of print materials (Col 2, lines 35-38) and the print materials are recommended to a user based upon the evaluated skill level of the user to increase the level of complexity of materials presented to the user

as the user's skill increases (Col 3, lines 30-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system with a speech recognition module to provide an estimate of linguistic content in machine recognizable format as disclosed by Adams Jr. et al, and an evaluation device for calculating an item score using statistical methods such as Item Response Theory, and a recommendation device that accesses a book database containing several versions of a book as taught by Wasowicz et al and that recommendations for further reading are for books to be read as taught by Parry et al for the purposes of allowing a student's progress to be tracked based upon the changing scores of a student over time.

Regarding claim 32, Adams, Jr. et al discloses a reading instruction system in which the recommendation device is operable to provide feedback to a user (Col 4, lines 42-47).

Regarding claim 33, Adams, Jr. et al does not specifically disclose a reading instruction system with means for providing marketing data. However, Wasowicz et al teaches that information concerning the scores of a reading student may be used by a recommender to suggest additional training tools, thus marketing a new tool set to a student who may be in need of the products offered. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system with a means for providing marketing data for the purposes of exposing students and other interested parties to tools and products that would be useful to the student.

8. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Jr. et al in view of Wasowicz et al in further view of Parry et al in further view of Huffman.

Regarding claim 31, Adams, Jr. et al/Wasowicz et al/Parry et al discloses a server device for adjusting the level profile for a user of a reading instruction system that provides a user with recommendations of books to be read. Adams, Jr. et al/Wasowicz et al/Parry et al does not specifically disclose that the reading instruction system includes an electronic book. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a reading instruction system in which a server device is used to adjust the level profile of an electronic book. Combining the system disclosed by Adams, Jr. et al with the teaching of Huffman et al produces a reading instruction system that may potentially reach a much larger number of users.

9. Claims 51 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry et al in view of Wasowicz et al in further view of Huffman et al in further view of Neuhaus (US 6,350,128).

Regarding claim 51 and 63, Parry et al discloses a technology assisted learning system for teaching reading that includes a database of printed materials (Col 2, lines 35-40), a client side display and speech detector (Col 3, lines 1-10, Fig. 1) and recommendation module that recommends books to be read from a database based upon a user's reading skill level. Adams, Jr. et al/Parry et al does not specifically disclose that evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means, computing a score based on factors extracted from the output of the

speech recognizer, factors are selected from a group consisting of insertions, deletions, substitutions, pauses, stretching out letters or stretching out sounds, or that at least one correct response is determined from sample responses provided by sample speakers. However, Wasowicz et al teaches that evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means (Col 7 line 66 – Col 8, line 5), computing a score based on factors extracted from the output of the speech recognizer (Col 7, lines 48-58), factors are selected from a group consisting of insertions, deletions, substitutions, pauses, stretching out letters or stretching out sounds (Col 8, lines 27-38), and that at least one correct response is determined from sample responses provided by sample speakers (Col 8, lines 2-12). Adams, Jr. et al/Parry et al/Wasowicz et al does not specifically disclose that the printed materials retrieved from the database comprise electronic books or that a difficulty level profile is adjusted while the user is reading the electronic book. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Also, Neuhaus teaches methods of determining scores for use in assessing reading skill of a user (Col 8, lines 20-34) and provides interactive modules to analyze portions of a user's speech and provide modifications to the material being read in real time in order to address particular reading deficiencies (Col 8, lines 49-60). Modifying the difficulty level of the text being read to target a particular speech deficiency for correction is within the scope of the modules recited in Neuhaus. Therefore, it would have been obvious to one of ordinary skill in the art to provide a technology assisted learning system for teaching reading that includes a database of printed materials, a client side display and speech detector, and recommendation module that recommends books to be read from a database based upon a

user's reading skill level and evaluating a user's reading skill is based on the output of a speech recognizer coupled to a detecting means, computing a score based on factors extracted from the output of the speech recognizer, factors are selected from a group consisting of insertions, deletions, substitutions, pauses, stretching out letters or stretching out sounds, and that at least one correct response is determined from sample responses provided by sample speakers as disclosed by Adams, Jr. et al/Parry et al/Wasowicz et al with a system that uses an electronic book selected from a database of such materials as taught by Huffman et al in which the level of difficulty is adjusted while a user is reading an electronic book as taught by Neuhaus for the purposes of providing a database of reading materials that are readily available and individually adjusted to a user on computerized learning system.

10. Claims 52-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry et al in view of Huffman et al in further view of Neuhaus.

Regarding claim 52, Parry et al discloses a technology assisted learning system for teaching reading that includes means for detecting a user's speech when reading out loud (Fig. 1) means for adjusting the reading level of said material (Col 3, lines 5-20), and means for evaluating a user's reading skill based upon the user reading out loud (Col 3, lines 1-20). Parry et al does not specifically disclose that the printed material from which the user is reading aloud is an electronic book, converts the estimate of speech into a score, or that a difficulty level profile of material being read is adjusted while the text is being read. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Neuhaus teaches methods of determining scores for use in assessing reading skill of a user (Col 8, lines 20-34) and provides interactive

modules to analyze portions of a user's speech and provide modifications to the material being read in real time in order to address particular reading deficiencies (Col 8, lines 49-60). Modifying the difficulty level of the text being read to target a particular speech deficiency for correction is within the scope of the modules recited in Neuhaus. Therefore, it would have been obvious to one of ordinary skill in the art to provide a technology assisted learning system for teaching reading that includes means for detecting a user's speech when reading out loud, means for adjusting the reading level of said material, and means for evaluating a user's reading skill based upon the user reading out loud as disclosed by Parry et al with a reading instruction system that uses an electronic book as taught by Huffman et al and modifying the difficulty level of the text being read to target a particular speech deficiency for correction as taught by Neuhaus for the purposes of providing the user with a steady stream of challenging concepts on the user's display.

Regarding claims 53 and 61, Parry et al discloses a technology assisted learning system for teaching reading that includes means for detecting a user's speech when reading out loud (Fig. 1), means for adjusting the reading level of said material (Col 3, lines 5-20), and means for evaluating a user's reading skill based upon the user reading out loud (Col 3, lines 1-20). Parry et al does not specifically that the reading material comprises an electronic book, converts the estimate of speech into a score, or that a difficulty level profile of material being read is adjusted while the text is being read. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Neuhaus teaches methods of determining scores for use in assessing reading skill of a user (Col 8, lines 20-34) and provides interactive modules to analyze

portions of a user's speech and provide modifications to the material being read in real time in order to address particular reading deficiencies (Col 8, lines 49-60). Modifying the difficulty level of the text being read to target a particular speech deficiency for correction is within the scope of the modules recited in Neuhaus. Therefore, it would have been obvious to one of ordinary skill in the art to provide a technology assisted learning system for teaching reading that includes means for detecting a user's speech when reading out loud, with means for adjusting the reading level of said material, and means for evaluating a user's reading skill based upon the user reading out loud in which the text being read is provided by an electronic book as taught by Huffman et al and that includes a system for converting an estimate of speech into an item score and converts the estimate of speech into a score and adjusts a difficulty level profile of material being read while the text is being read as taught by Neuhaus for the purposes of readily determining the ongoing needs of reading material required by a user.

Regarding claim 54, Parry et al discloses a technology assisted learning system for teaching a user to read wherein the recommendation device accesses at least one database (Col 6, lines 20-35).

Regarding claims 55-57, Parry et al discloses a technology assisted learning system for teaching a user to read wherein the printed materials includes a book database (claim 55) and in which the database contains several versions of a book (claim 56), and in which the several versions of the books include versions with different level profiles (claim 57) (Col 6, lines 36-59).

Regarding claim 58, Parry et al discloses a technology assisted learning system for teaching a user to read wherein the book database contains a memory pointer capable of tracking in several versions of a book where a user is reading (Col 7, lines 20-42).

Regarding claims 59 and 60, Parry et al discloses a technology assisted learning system for teaching a user to read wherein the several versions of the book contain linkage points (claim 59) (Col 7, lines 32-42) and uses the linkage points to switch between versions of the text to be read (claim 60) (Col 8, lines 1-19).

Regarding claim 62, Parry et al discloses a technology assisted learning system for teaching reading that includes a database of printed materials (Col 2, lines 35-40), a client side display and speech detector (Col 3, lines 1-10, Fig. 1), means for adjusting the reading level of said material (Col 3, lines 5-20), and means for evaluating a user's reading skill based upon the user reading out loud (Col 3, lines 1-20). Parry et al does not specifically disclose that the printed material from which the user is reading aloud is an electronic book, converts the estimate of speech into a score, or that a difficulty level profile of material being read is adjusted while the text is being read. However, Huffman et al teaches a reading instruction system that uses an electronic book (Col 2, lines 61-65). Neuhaus teaches methods of determining scores for use in assessing reading skill of a user (Col 8, lines 20-34) and provides interactive modules to analyze portions of a user's speech and provide modifications to the material being read in real time in order to address particular reading deficiencies (Col 8, lines 49-60). Modifying the difficulty level of the text being read to target a particular speech deficiency for correction is within the scope of the modules recited in Neuhaus. Therefore, it would have been obvious to one of ordinary skill in the art to provide a technology assisted learning system for

teaching reading that includes a database of printed materials, a client side display and speech detector, means for adjusting the reading level of said material, and means for evaluating a user's reading skill based upon the user reading out loud as disclosed by Parry et al with a reading instruction system that uses an electronic book as taught by Huffman et al and modifying the difficulty level of the text being read to target a particular speech deficiency for correction as taught by Neuhaus for the purposes of allowing a student to concentrate on the learning experience instead of spending time gathering and collecting resources required.

Response to Arguments

Applicant's arguments with respect to claims 1-13 and 16-67 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Sotomayor whose telephone number is 703-305-4558. The examiner can normally be reached on 6:30-4:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 703-308-1745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jls
August 25, 2004

JESSICA HARRISON
PRIMARY EXAMINER